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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,347	09/20/2001	Jun Nakagawa	110253	1891
7590	01/10/2005		EXAMINER	
Oliff & Berridge PO Box 19928 Alexandria, VA 22320			KOVALICK, VINCENT E	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/890,347	Applicant(s) NAKAGAWA ET AL.	
	Examiner Vincent E Kovalick	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9,10,13-21,24,25 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 7,8,11,12,22,23,26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/6/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Applicant's Patent Application, Serial No. 09/890,347, with a File Date of September 20, 2001.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisaki et al. (USP 6,674,917) taken with Sites et al. (USP 5,515,159).

Relative to claims 1, 2, 16 and 17, Hisaki et al. **teaches** a method of synthesizing an image for any light source position and apparatus therefor (col. 1, lines 37-67 and col. 2, lines 1-31); Hisaki et al. further **teaches** an image generation system for generating an image comprising: means which performs a light-source simple processing, the processing being necessary to change at least one of the brightness and color of a surface of a simple object according to the amount of light that is sent from light source and received by the surface of the simple object; and means which generates an image of the simple object based on a result of the light-source simple processing (col. 2, lines 13-21); Hisaki et al. further **teaches** means which performs computation to obtain information relating to at least one of the brightness and color of a primitive surface constructing a simple object, based on an incident angle of a light vector from a

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light source; and means which generates an image of the simple object based on the information relating to at least one of the brightness and color of the primitive surface constructing the simple object (col. 1, lines 13-26).

Hisaki et al. **does not** a computer-usable program embodied on an information storage medium or in a carrier wave, the program implementing on a computer.

Hisaki et al. teaches a method of synthesizing an image for any light source position and apparatus therefor.

Sites et al. **teaches** means located above a package at an inspection station for generating at least one image of the seal from the low incident angle light reflected therefrom (col. 1, lines 34-67 and col. 2, lines 1-26); Sites et al. further **teaches** a computer-usable program embodied on an information storage medium or in a carrier wave, the program implementing on a computer (col. 2, lines 2-10-12).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Hisaki et al. the feature as taught by Sites et al. in order to provide the processing means and programs necessary to process the brightness and color data and in turn generate the resulting image.

Regarding claims 3-4 and 18-19, Hisaki et al. further **teaches** said image generation system wherein computation for obtaining information relating to at least one of the brightness and color of a primitive surface constructing the simple object is performed based on an angle difference between a line-of sight vector of a virtual camera and a light vector from the light source (col. 2, lines 13-26).

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4. Claims 5-6 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisaki et al. taken with Sites et al. as applied to claim 3-4 and 18-19 respectively in item 3 hereinabove, and further in view of Sakaibara et al. (USP 5,786,822).

Regarding claims 5-6 and 20-21, Hisaki et al. taken with Sites et al. **does not teach** an image generation system wherein the angle difference is computed based on two-axis components in both the line-of sight vector of the virtual camera and the light vector from the light source.

Hisaki et al. taken with Sites et al. teaches a method of synthesizing an image for any light source position and apparatus therefor.

Sakaibara et al. **teaches** a method and apparatus for mapping texture on an object displayed at a varying view angle from an observer; Sakaibara et al. further **teaches teach** an image generation system wherein the angle difference is computed based on two-axis components in both the line-of sight vector of the virtual camera and the light vector from the light source (col. 6, lines 57-61 and col. 9, lines 25-32).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Hisaki et al. taken with Site et al. the feature as taught by Sakaibara et al. in order to provide texture mapping method and apparatus which permit the representation of a feeling of unevenness as well as a pattern an feeling of material displayed with a simple hardware configuration.

5. Claims 9-10 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisaki et al. taken with Sites et al. as applied to claims 1-2 and 16-17 respectively in item 3 hereinabove, and further in view of Nordbryhn (USP 5,898,169).

Relative to claims 9-10 and 24-25 Hisaki et al. taken with Sites et al. **does not teach** the image generation system wherein the light source is a source of parallel rays.

Hisaki et al. taken with Sites et al. teaches a method of synthesizing an image for any light source position and apparatus therefor.

Nordbryhn **teaches** a device for generating a contour image of an object (col. 1, lines 5-67 and col. 2, lines 1-17); Nordbryhn further **teaches** the image generation system wherein the light source is a source of parallel rays (col. 2, lines 18-33 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Hisaki et al. taken with Site et al. the feature as taught by Nordbryhn in order to provide means for directing light rays received from a light source as parallel rays to an object.

6. Claims 13-15 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisaki et al. taken with Sites et al. as applied to claims 1-2 and 16-17 respectively in item 3 hereinabove, and further in view of Liang (USP 5,786,908).

Regarding claims 13-14 and 28-30, Hisaki et al. taken with Sites et al. **does not teach** the image generation system wherein the simple object of primitive surfaces constructing the simple object are set to have first and second color information; and wherein information relating to the color of the primitive surfaces is computed by interpolation computation based on the first and second color information and information relating to at least one to the brightness and color of one of the primitive surfaces.

Hisaki et al. taken with Sites et al. teaches a method of synthesizing an image for any light source position and apparatus therefor.

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Liang **teaches** converting image color values from a first to a second color space (col. 1, lines 16-67 and col. 2, lines 1-54); Liang further **teaches** an image generation system wherein the simple object of primitive surfaces constructing the simple object are set to have first and second color information; and wherein information relating to the color of the primitive surfaces is computed by interpolation computation based on the first and second color information and information relating to at least one to the brightness and color of one of the primitive surfaces (col. 3, lines 4-40 and Abstract).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Hisaki et al. taken with Site et al. the feature as taught by Liang in order to provide means for color matching involving the process of converting color values between color spaces.

Allowable Subject Matter

7. Claims 7-8, 11-12, 22-23 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Relative to claims 7-8 and 22-23, the major difference between the teachings of the prior art of record (Hisaki, USP 6,674,917 and Sites et al., USP5,515,159) and that of the instant invention is that said prior art of record **does not teach** an image generation system comprising means which rotates a simple object such that a normal vector of primitive surfaces constructing the simple object becomes parallel to a line-of sight vector of a virtual camera.

Relative to claims 11-12 and 26-27, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** an

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image generation system wherein information relating to at least one of the brightness and color of a primitive surface constructing one simple object among a plurality of simple objects is used to generate an image of a primitive surface of another simple object among the plurality of simple objects

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No.	5,821,999	Barnsley et al.
U. S. Patent No.	5,682,505	Usami et al.
U. S. Patent No.	5,608,451	Konno et al.
U. S. Patent No.	5,253,339	Wells et al.

Responses

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Vincent E. Kovalick

January 6, 2005



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